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09/624,810	07/24/2000	Robert William Bruce	13DV13228	6522

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EXAMINER	
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ART UNIT	PAPER NUMBER
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/624,810
Filing Date: July 24, 2000
Appellant(s): BRUCE ET AL.

MAILED
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09/624,810
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 23, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. Applicant states that following the final rejection of March 24, 2004, Appellants filed a response under 37 CFR 1.116, on May 25, 2004, without amendments to the claims. The Examiner agrees with the stated dates and responses filed. However, Applicant further states: In the Advisory Action filed June 18, 2004 (Paper No. 20040616), the Examiner indicated that "the proposed amendment(s) will not be entered" and states that said selection of item 7 in PTOL-303 is "erroneous". Applicant's representative however, fails to note the clear selection of item 5 of the PTOL-303: "The request for reconsideration has been considered but does not place the application in condition for allowance because:" and is followed by an extensive rebuttal of Applicant's arguments. Apparently, Applicant's representative did not consider the attached continuation page for item 5 of the PTOL-303. The continuation page of all PTOL-303 with item 7 checked are established to place Applicant's representative on notice that the "request for reconsideration has been considered but does not place the application in

condition for allowance" followed by rationale therefor including argument rebuttals by the Examiner. It is further noted that item 7 does not state "For purposes of Appeal, the proposed amendment(s) or affidavit or exhibit or request for reconsideration" yet MUST be filled in regardless to identify the status of the to-be-appealed claims.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims stand or fall together is agreed with.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4,988,844	Dietrich, Walter et al	1-1991

(10) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1-4, 6, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Dietrich, Walter et al (US 4,988,844 A). This rejection is set forth in a prior Office Action, mailed on March 24, 2004.

Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, Walter et al (US 4,988,844 A). This rejection is set forth in a prior Office Action, mailed on March 24, 2004.

(11) Response to Argument

Applicant states:

"

Contrary to Claim 1, Dietrich does not disclose that either of the electron beams 17 and 18 has a higher intensity at the interface of the surface 9 of the molten bath 8 with the crucible 6 than at a central region of the bath surface 9. Instead, Dietrich discloses and shows the beam patterns 26 and 27 as centrally located about the bath's axis of symmetry 16, and are never projected near or onto the perimeter of the bath 8, as evident from Dietrich's Figures 1, 2 and 3. Furthermore, because Dietrich's electrode 4 unintentionally shifts the electron beams 17 and 18 toward the electrode 4 (Column 3, Lines 15-18), Dietrich's setups 22 and 23 are only required to counteract this shift (column 3, Lines 25-31), i.e., the setups 22 and 23 shift the beams 17 and 18 in a radial outward direction relative to the electrode 4 so as to reestablish the intended paths of the beams 17 and 18.

"

In response, Figure 3 of Dietrich shows the intensity profile (38) along diameter lines 34, 35. The intensity profile indicates maximum intensity values (39, 40) along the entire width (36, 37) of beam positions 26 and 27. The electron profiles shown in Figure 3 do not depict "higher intensity at an interface of the surface (9) of the coating material (molten bath 8) with the crucible (6) than at a central region of the surface of the coating material (molten bath 8)", as claimed by claim 1.

In other words, Dietrich's intensity profile (38) would have to be skewed over the entire diameter of the molten bath 8 and thus represent broader electron beams. The Examiner has repeatedly given evidence, found in Dietrich's disclosure, that Dietrich's electron beam control elements are capable of the intended use of Dietrich's apparatus. Dietrich discusses Figure 3 with respect to radiation generated at the electron beam / melting bath interface:

"

The electromagnetic radiation includes light. The light is divided into quantities 50, 51, 52 ; 70, 71, 72 issuing from a strike point of at least one of the electron beams 17, 18 on the surface of the melting bath 9. The light is divided into at least two partial light quantities 73, 74, which are converted into electrical signals AB, which are compared to one another. .... The optical filter preferably accentuates the light intensity emitted from an effective zone of the electron beams 17, 18 on the melting bath 9. ... Preferably, only light emitted from partial areas 36, 37 of the surface 9 of the melting bath 8 are observed according to the technique of the invention. The partial areas 36, 37 can be defined by areas of lamellar scattering of the electron beams 17, 18 over areas which radiates substantially in a semicircle 26, 27 for each of the electron beams 17, 18.

" (column 4; lines 13-35)

Dietrich then processes the radiation information in either real-time or by an operator or both to reposition the electron beams as necessary by Dietrich's comparator 60 to apply a symmetric beam pattern relative to either the bath or the electrode:

"

The output signals AB of the photoelectric sensors 56, 57 can be sent to a comparator 60 establishing a difference (A-B) of the output signals. This different signal is used for steering the electron beam guns 10, 11.

According to the invention, the electron beams can be applied symmetrically to the melting bath n/or (assumed "and/or") electrode, by balancing the position of the electron beam strike points. This process can be accomplished automatically or with monitoring by an observer, or both.

" (column 4; lines 51-55)

Further:

"

Electrical signals A and B supplied by sensors 56, 57 are sent to a comparator 60, which establishes the difference A-B of both signals and steers the *radial* deflection of the two electron beam guns 10 and 11 with this differential signal.

" (column 5; lines 30-35)

The above-stated proof provided by Dietrich is believed sufficient to demonstrate that Dietrich's apparatus is capable of performing the intended use: When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

Applicant further states:

"

...each of the Examiner's explanations for this "capability" is based on operating Dietrich's deflecting systems 12 and 13 in a manner that is not disclosed or suggested by Dietrich. Therefore even if Dietrich's apparatus is theoretically "capable" of operation in the manner

described by the Examiner, Dietrich does not disclose either expressly or inherently such an operation or any reason for operating Dietrich's apparatus in the manner claimed by Appellants, namely, projecting either of the electron beams 17/18 onto the bath-crucible interface.

"

In response, again the Examiner again cites Dietrich who teaches that comparator 60 steers the *radial* deflection of the two electron beam guns 10 and 11 depending on a differential signal (A-B). (column 5; lines 30-35)

Applicant states:

"

If Dietrich's apparatus were operated in the manner proposed by the Examiner, it is apparent from Figure 1 that the beams 17 and 18 would no longer strike the electrode 4 rendering the apparatus inoperable for its intended use.

"

In response, the Examiner agrees that with Applicant to the extent that Dietrich's electron beams must strike the electrode 4 in order for Dietrich's apparatus to operate as intended. Yet, as discussed by Dietrich, Dietrich's electron beam control apparatus also provides "electrical signals A and B supplied by sensors 56, 57 are sent to a comparator 60, which establishes the difference A-B of both signals and steers the *radial* deflection of the two electron beam guns 10 and 11 with this differential signal. ". Thus, two facts are apparent from the apparatus of Dietrich:

i. Dietrich's electron beams must strike the electrode 4

ii. Dietrich's comparator 60, which establishes the difference A-B of both signals steers the *radial* deflection of the two electron beam guns 10 and 11 with this differential signal

It is completely plausible that, with the above two required conditions, Dietrich's apparatus would be capable of skewing its intensity profile to encompass a larger area such that "higher intensity at an interface of the surface (9) of the coating material (molten bath 8) with the crucible (6) than at a central region of the surface of the coating material (molten bath 8)", as claimed by claim 1. This is consistent with Dietrich's goal and operation:

"

Thus, for example, the evaporation energy sources of the electron beam can be moved over the surface of the material to be evaporated such that as even a surface temperature as possible is reached on a specific surface, and therefore, a constant evaporation rate is maintained.

" (column 1; lines 18-23)

In other words, Dietrich's goal of "a constant evaporation rate" depends upon a constant temperature of the coating material (molten bath 8) – "as even a surface temperature as possible is reached on a specific surface". What Dietrich is then implying is that irradiation of the electron beams over a larger area would produce "a constant evaporation rate" because "as even a surface temperature as possible is reached on a specific surface".

Applicant states that the claim 4 requirements are not met. Yet, claim 4 is anticipated by Dietrich:

"

the beam pattern (26-27) has a perimeter on the surface portion of the crucible beam (see above) being incident on the surface of the coating material at an oblique angle (Figure 3) so as to

establish relative to the electron beam gun a proximal point (most radial outward point of any beam pattern along 34/35) and an oppositely-disposed distal point (most radial inward point of any beam pattern along 34/35) at the perimeter of the beam pattern, the beam pattern having a lower intensity at the proximal and distal points (before maxima at 39/40) than elsewhere at the perimeter of the beam pattern.

“

Applicant cites:

“

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.

“

In response, the Examiner believes that he has established Dietrich's demonstration that the intensity variable is indeed a “result-effective variable” according to his objectives and operations:

“

Thus, for example, the evaporation energy sources of the electron beam can be moved over the surface of the material to be evaporated such that as even a surface temperature as possible is reached on a specific surface, and therefore, a constant evaporation rate is maintained.

“ (column 1; lines 18-23)

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Rudy Zervigon
Examiner
Art Unit 1763

Rudy Zervigon (Examiner, Art Unit 1763)
October 26, 2004

Conferees
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